1.   This action is in response to the amendment filed on 10/12/10.

2.   Claims 1-8, 16-21, and 28-30 have been canceled.

    Claims 12-14 have been canceled (See the Examiner's amendment).

3.   Claims 9, 15, 22, 24, 26-27 have been amended.

4.   Claims 31-33 have been added.

5.   Claims 9-15, 22-27, and 31-33 have been allowed.

Information Disclosure Statement

6.   The information disclosure statement (IDS) submitted on 10/12/2010. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

EXAMINER'S AMENDMENT

7.   An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

    Authorization for this examiner's amendment was given in a telephone interview with Mr. Eric S. Hiponia (Reg. No. 62,002) on 12/16/10

The application has been amended as follows:
In the claims:

1-8.   (Cancelled).

9.   (Currently Amended)   A method, comprising:

receiving a request to store a first firmware variable;

determining if a compressor **stored in a non-fault tolerant portion of a firmware storage device** is available for compressing the first firmware variable; and

employing the compressor if it is available to compress the first firmware variable and ~~store it~~ **storing the first firmware variable in a compressed form** in a firmware storage device, **the first firmware variable in the compressed form to be decompressed via a decompressor stored in a fault-tolerant portion of the firmware storage device,** otherwise storing the first firmware variable in an uncompressed form in the firmware storage device if the compressor is not available.

10.   (Original)   The method of claim 9, further comprising:

receiving a request to store a second firmware variable;

determining the compressor is no longer available; and

storing the second firmware variable in the firmware storage device in an uncompressed form.

11.   (Original)   The method of claim 9, wherein uncompressed firmware variables are stored in a 2-tuple format of

$$<M_i, B_i>,$$

wherein M_i comprises metadata corresponding to an ith tuple, and B_i comprises data

corresponding to the ith tuple, while compressed firmware variables are stored in a 2-

tuple format of

$$<M'_i, C(B_i)>,$$

wherein M'_i comprises metadata corresponding to an ith tuple containing indicia

indicating the ith tuple is compressed, B_i comprises data corresponding to the ith tuple,

and C represents a compression function.

12-14 (Cancelled).

15.   (Currently Amended)   A method comprising:

        storing a first converter **and a second converter** in a non-fault tolerant portion of

a firmware storage device;

        storing a first deconverter **and a second deconverter** in a fault tolerant portion

of the firmware storage device;

        determining if **each of** the first converter [[is]] **and the second converter are**

available; ~~and~~

        storing firmware variables in a **combined converted form via first and second**

conversion operations performed by the first and second converters respectively

if it is determined that both of the first and second converters are available;

storing firmware variables in a first converted form **via conversion operations performed by the first converter** if the first converter is determined to be available **and the second converter is not available;**

storing firmware variables in a second converted form via conversion operations performed by the second converter if it is determined that the second converter is available while the first converter is not available;

otherwise storing the firmware variables in an unconverted form.

16-21. (Cancelled).

22.   (Currently Amended) An article of manufacture, comprising:

a machine-readable **non-transitory storage** medium on which instructions are stored, which when executed facilitate storage of firmware variables by performing operations including:

receiving a request to store a first firmware variable;

determining if a compressor **stored in a non-fault tolerant portion of a firmware storage device** is available for compressing the first firmware variable; and

employing the compressor if it is available to compress the first firmware variable and ~~store it~~ **storing the first firmware variable in a compressed form** in a firmware storage device, **the first firmware variable in the compressed form to be decompressed via a decompressor stored in a fault-tolerant**

portion of the firmware storage device, otherwise storing the first firmware

variable in an uncompressed form in the firmware storage device if the

compressor is not available.

23.   (Original)   The article of manufacture of claim 22, wherein the article

comprises flash memory.

24.   (Currently Amended) The article of manufacture of claim 23, wherein ~~a portion of~~

~~the instructions comprise a compressor employed for compressing firmware variables~~

~~and~~ the flash memory includes [[a]] **the** non-fault tolerant ~~block~~ **portion** of memory in

which the compressor is stored.

25.   (Original) The article of manufacture of claim 24, wherein execution of the

instructions performs the further operations of:

        receiving a request to store a second firmware variable;

        determining the compressor is no longer available; and

        storing the second firmware variable in the firmware storage device in an

uncompressed form.

26.   (Currently Amended)   The article of manufacture of claim 23, wherein ~~a~~

~~portion of the instructions comprise a decompressor employed for decompressing~~

~~compressed firmware variables and~~ the flash memory includes [[a]] **the** fault-tolerant

~~block~~ **portion** of memory in which the decompressor is stored.

27.   (Currently Amended)   A computer system, comprising:

a motherboard;

a processor, coupled to the motherboard;

volatile memory, coupled to the motherboard; and

a boot firmware device, coupled to the motherboard and comprising flash

memory having firmware components stored therein including a compressor, the

firmware components comprising instructions that when executed by the processor

effectuate storage of firmware variables by performing operations including:

publishing an interface;

receiving a request to store a firmware variable via the interface;

determining if a compressor **stored in a non-fault tolerant portion of a**

firmware storage device is available for compressing the firmware variable; and

employing the compressor if it is available to compress the ~~first~~ firmware

variable and ~~store it~~ **storing the firmware variable in a compressed form** in a

firmware storage device, **the firmware variable in the compressed form to be**

decompressed via a decompressor stored in a fault-tolerant portion of the

firmware storage device, otherwise storing the firmware variable in an

uncompressed form in the firmware storage device if the compressor is not

available.

28-30.   (Cancelled).

31.   (New) The method of claim 15, wherein the first converter comprises a
compressor, and the first deconverter comprises a decompressor.

32.   (New) The method of claim 31, wherein the second converter comprises an
encryptor and the second deconverter comprises a decryptor.

33.   (New) The method of claim 32, wherein the second converter adds error
correction code (ECC) data to a variable, and the second deconverter utilizes the ECC
data detect and correct bit errors in non-ECC data of the variable.

REASON FOR ALLOWANCE

8.   The following is an examiner's statement of reason for allowance:

        The cited prior art taken alone or in combination fail to teach, in

    combination with the other claimed limitations, a method for determining if a

    compressor stored in a non-fault tolerant portion of a firmware storage device is

    available for compressing the first firmware variable; storing the first firmware

    variable in a compressed form in a firmware storage device, the first firmware

    variable in the compressed form to be decompressed via a decompressor stored

    in a fault-tolerant portion of the firmware storage device, otherwise storing the

    firmware variable in an uncompressed form in the firmware storage device if the

    compressor is not available, as recited in the independent claims 9, 22 and 27.

The cited prior art taken alone or in combination fail to teach, in combination with the other claimed limitations, a method for storing firmware variables in a combined converted form via first and second conversion operations performed by the first and second converters respectively if it is determined that both of the first and second converters are available, as recited in the independent claim 15.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

9.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chameli Das whose telephone number is 571-272-3696. The examiner can normally be reached on Monday-Thursday from 7:00 A.M. to 3:30 P.M and 7:30 P.M – 9:30 P.M (E.T).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor Tuan Dam can be reached at 571-272-3695. The fax number for this group is (571) 273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system,

contact the Electronic Business Center (EBC) at (866) 217-9197 (toll-free). If you

would like assistance from a USPTO Customer Service Representative or access to

the automated information system, call (800) 786-9199 (in the USA or Canada) or

(571) 272-1000.

/CHAMELI C. DAS/

Primary Examiner, Art Unit 2192

Dated: 12/16/10